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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/673,002	12/11/2000	Jean-Louis Dornstetter	518-1012	7375
23644	7590	06/09/2005	EXAMINER	
BARNES & THORNBURG P.O. BOX 2786 CHICAGO, IL 60690-2786			GHULAMALI, QUTBUDDIN	
			ART UNIT	PAPER NUMBER
			2637	

DATE MAILED: 06/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/673,002

Applicant(s)

DORNSTETTER ET AL.

Examiner

Qutub Ghulamali

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 December 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,8-12 and 18-20 is/are rejected.
- 7) ☒ Claim(s) 3-7 and 13-17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This Office Action is in response to the Amendment filed on 12/23/2004
2. Amendment to the specification is hereby acknowledged.

#### ***Claim Objections***

3. Claims 1 and 11 are objected to because of the following informalities:  
In claims 1 and 11, lines 7, 9, 11 and 14 respectively, the “,” is required to be replaced by --;--. Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 2, 8-12, 18-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Alard et al (USP 6,263,029).

Regarding claims 1,10 and 20, Alard discloses a method for synchronizing a receiver to receive signal corresponding to a reference signal transmitted in a transmission channel, the method comprising the steps of:

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analyzing the receive signal to obtain a characterization signal as a response of said transmission channel to a source signal (col. 10, lines 25-55);

establishing a characterization matrix for estimating a covariance of said characterization signal (col. 10, lines 13, lines 50-65);

identifying dominant eigenvalues as highest (optimum) eigenvalues of the characterization matrix (col. 15, lines 12-21, 54-62);

calculating a correlation function of said source signal with the sum of eigenvectors respectively associated with said dominant eigenvalues (col. 1, lines 32-39; col. 15, lines 57-62); and

identifying a first maximum of the correlation function to synchronize the receiver (figs 6A-G; col. 16, lines 57-67).

Regarding claim 11, the apparatus claimed is nothing more than restating the functions of the specific components of the apparatus as method claimed above and therefore it would have been obvious, considering the aforementioned rejection for the method claim 1.

Regarding claims 2 and 12, Alard discloses identifying a predetermined (known) number of highest eigenvalues of the characterization matrix (col. 3, lines 66-67; col. 4, lines 1-10).

Regarding claims 8 and 18, the smoothing is nothing more than averaging of the signal response (col. 15, lines 25-29).

Regarding claims 9 and 19, Alard discloses characterization signal is obtained as an estimate of an impulse response of the transmission channel (abstract; col. 1, lines 25-29).

*Allowable Subject Matter*

6. Claims 3-7, 13-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Conclusion*

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patents:

Fukagawa et al (USP 6,529,745) discloses a mobile station transmitted signal received at array antenna for conversion.

Trippett et al (USP 6,130,643) shows an antenna nulling system and correlator.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qutub Ghulamali whose telephone number is (571) 272-3014.

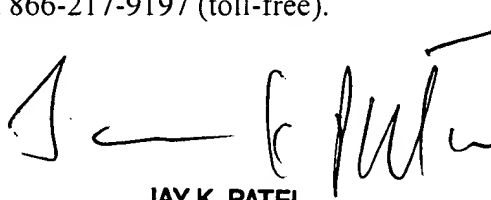
The examiner can normally be reached on Monday-Friday from 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

QG.  
June 2, 2005.



**JAY K. PATEL**  
**SUPERVISORY PATENT EXAMINER**